

WAR EXPERIENCE AIDS MARMON MEN

Lessons Learned in Stress of War Applied to Peace Production.

By F. E. MOSKOVICS.

Vice-president Nordylke and Marmion Co. It was freely predicted during the war that the world's truest great motor car would eventually be designed and made by one of those few motor car manufacturers who were devoting their factories, capital and organizations to the building of aircraft motors for the Government. The frequency of this prediction was based upon the fact that the experienced engineers and manufacturers had learned a new engineering and manufacturing science during the war.

Under the tremendous drive of war it was evident that the scientist, the engineer and the manufacturer were inspired to feats of endeavor utterly beyond the normal. Achievements in the productive line went far beyond known manufacturing standards and set up a new high plane of efficiency.

The battle of the laboratory and factory was as tense, as dramatic in its way, as the operations on the battle front. The urgency was as great and the impossible was as frequently accomplished. Keen to tremendous pressure, the manufacturers who were producing gasoline engines and aviation motors for the Government accomplished things that never before were done outside of the laboratory. They revolutionized the automobile engine production standards.

It was the knowledge of such things that made engineers and leaders of production predict that the world's great car would be born of the war. They knew of the mighty lessons learned in production, in accuracy and in close limits which a few years ago were considered purely laboratory practice, utterly beyond the pale of quantity production.

The very fact that work on the Liberty motor inspired the maker and his organization how to successfully build engines to the close limits of that motor and how to establish an inspection organization more exacting than any before known showed the leaders that the maker could and must follow the new ideals in the future.

It was clearly seen by the prophets that the great strides would probably come in the factory end and not from the designer or engineer. The war work clearly taught that no radical changes in the design or principle of the internal combustion engine had developed.

It was from the accumulated knowledge of this sort that the Nordylke and Marmion company produced the new series Marmion 34 with its high efficiency engine. Its special war work had been unique. The only automobile maker to produce two entirely different types of aviation motors for the Government, it had won the champion Liberty motor builders' pennant in the great contest of 1918.

In the new model we have a car of exceptional qualities with a new sweetness of running, with a motor free from vibrational disturbances and a performance record that is truly remarkable. The results were accomplished by no alchemy, but by a practical application of the great lessons we learned in the building of aircraft motors. We acquired hitherto unknown accuracy of heat treatment and a new application of metallurgy.

All of these things were known before. It is true, but only in the laboratory or in an experimental way. All were used in building hand made racing cars, but they never existed in the realm of practical production, and they set up new standards of accuracy and precision. The net result of our experience is that we are enabled to present to you a motor car brought to the most exacting standards



F. E. MOSKOVICS.

What the Car Has Done

By W. C. Sills,

General Manager of Sales, Chevrolet Motor Company.

CREATED wealth by increasing land values. Brought the farmer closer to his markets, making farming a more profitable and pleasant occupation.

Enabled the physician to save time in reaching his patients and save lives in many instances. Increased the personal efficiency of all business men who have availed themselves of its time and labor saving advantages.

Added the salesman to cover more territory in less time—to do his work better, quicker and at less expense.

Furnished a means of healthful recreation for all. Stimulated the building of thousands of miles of better highways, bringing commercial prosperity to hundreds of cities and towns formerly handicapped because of their inaccessibility.

Enabled those in rural communities to enjoy all the advantages of the city and those in the cities all the pleasures of the country.

Increased the economic wealth of the country by creating a new industry which now ranks third among the great industries of the country. Stimulated greater sociability among farmers and encouraging them to modernize both their methods and their homes.

Demonstrated the economy and superiority of motor transportation for all commercial uses.

of the workmanship, which bears the same relation to the first hand fitted cars that the American Liberty aircraft motors bore to previous automotive engine standards.

SAXON WINS PUBLIC AT ONCE.

Space A, No. 51, is one of the genuinely interesting at the national show. It is the exhibit of the Saxon, the car about which so much has been said and so little made public until this time.

A touring car in red, alluring in lines and finish, an ultra smart sedan in light green and a chassis are to be seen, and apparently nobody overlooked this new bidder for the plaudits of motordom.

That this product of the Saxon Motor Car Corporation is the result of great thought and manufacturing skill is at once evident. Exclusive features are many, and all of these are in the direction of a step forward, anticipating the car of years to come.

STUDEBAKER HAS NEW SENSATION

Light Six Is One of the Features of the Big Show.

Springing sensations at automobile shows has become a Studebaker habit, but perhaps the greatest one yet introduced is the appearance of the new Studebaker Light Six. Coincident with its advent at the motor car show it is announced that the entire facilities of the great \$15,000,000 factories now nearing completion in South Bend, Ind., will be devoted to the manufacture of this model.

Visitors attending the show this year will recall the famous Studebaker Gold Chassis and Gold Car, features of previous shows, both of which were sent the length and breadth of the land and then to foreign countries. In the course of their travels they were viewed by millions of people.

And now the new car is hailed by its makers as the "World's Greatest Light Six," and judging from the crowds that have gathered about it and the interest displayed in it, this car is considered not only unusual but revolutionary in its design.

The new Light Six ranks as the first car at its price equipped with cord tires, which 10-day are on all of the most expensive motor cars. As a matter of fact numerous features of high priced motor cars are to be found in the Studebaker Light Six.

A hurried inspection at the show gives only a slight conception of how much class this new car really has. It looks a great deal longer than it is because of the rakish cut of the body. The high, narrow radiator is particularly pleasing and the lines of the lustrous black enameled body are low and graceful viewed from any angle. Even the wind shield is tipped at a clever angle and the fenders have a neat "hug" which is convincing.

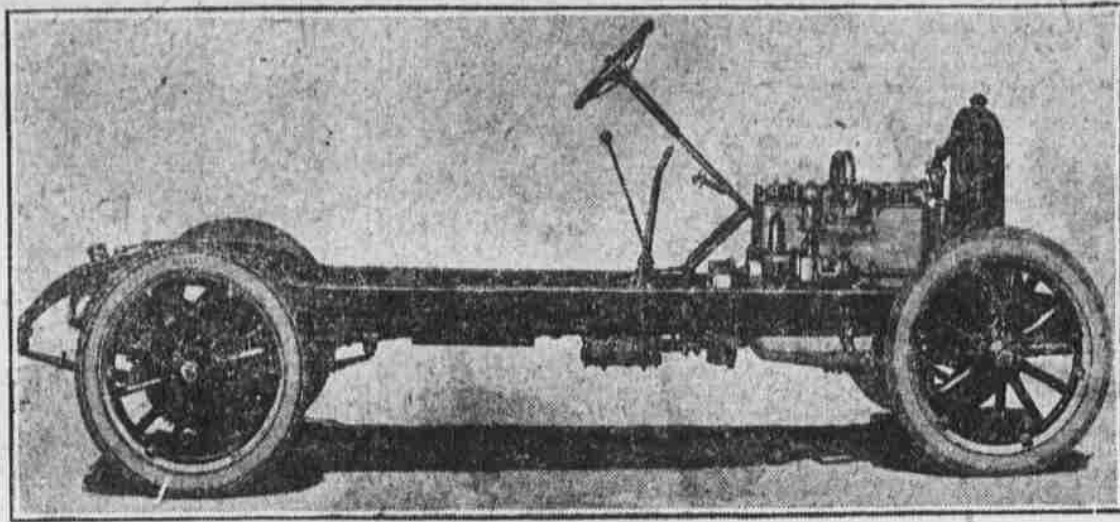
Outstanding features are such little things not usually found in cars of this price, like plate glass oval windows in rear of a distinctive Dwyer top, outside door handles, double dimming headlights, limousine footboard and other luxurious trimmings. The upholstery is of genuine leather and both driver's compartment and tonneau have plenty of leg room. The seats are big, deep and comfortable, and the instrument board is well arranged for the convenience of driver. In fact, when you slide in under the wheel you are immediately delighted with the accessibility of clutch pedal, brake, accelerator and starter, while a big easily handled steering wheel makes you feel that you could drive the car all day without any discomfort.

Of 112-inch wheel base, the new Studebaker has a 40-horse power six-cylinder motor, and the car weighs completely but 2,400 pounds. Cord tires are 28x4 inches and wheels are steel felloes.

So perfectly is the new car balanced that the chassis can be either halved or quartered, and each section will show the same weight. Because of this even distribution of weight the new Studebaker Light Six in severe tests preceding its announcement proved its ability to hold the road at speeds under conditions where heavier, less scientifically balanced cars showed a tendency toward sideways.

Other outstanding and exceptional features in the new car are numerous. The motor of 2 1/2 inch bore by 4 1/2 inch stroke, with aluminum detachable head, is notable not only for its accessibility and clean cut design, but also for its truly wonderful economy. This economy is secured by means of a unique feature which converts every drop of gasoline into power with no possibility of waste, and the performance and general efficiency of the new

Chassis of the New Studebaker Light Six.



car are in consequence remarkable.

A feature for which a patent application has been made, the internal hot spot which surrounds each spark plug, secures better vaporization, a hotter fuel, greater economy and better combustion. All these result from the fact that the incoming gas, after being thoroughly vaporized by passing over the hot combustion chamber, hits this unjacketed hot spot the instant it gets through the inlet valve.

This hot spot is controlled and never becomes excessively hot. Part of the intake manifold is in contact with the water manifold. The flow of cold water is faster as the speed of the motor is increased, so that the water remains at a constant temperature.

This exclusive construction takes the heat from the air cooled motor and combines with it the obvious advantages of the water cooled type. Inclined valve action, found only in one imported car and in one of the highest priced American motors, is a feature of the new Studebaker Light

Six. With this new type of valve action, where the valves are inclined at an angle of 20 deg. and with the new intake manifold design, the gases in the combustion chamber are not deflected in any way. There is practically a straight line passage into the combustion chamber, providing maximum economy, perfect combustion and precluding the possibility of any unvaporized gasoline lying on top of or seeping down past the pistons.

The Light Six is the only car, with the exception of two selling considerably over \$3,000, that has the crankshaft and connecting rods machined all over. These machining operations insure perfect balance. A corps of expert inspectors check up on the work of the machinists, and every crankshaft is in perfect running balance when it is passed by the final inspector for assembling. Connecting rods are ten inches in length or equal to that of a well known make of car selling at nearly three times the Studebaker price. Little angularity, less

side wear on the pistons and better balance result. Among other noteworthy features are a convenient and accessible adjustment for taking up wear on the chain used in driving the timing gears; three point suspension for motor and transmission; straight line frame construction with no offsets; oil treated nickel-steel transmission gears; and a construction that obtains straight direct line drive without angularity in the driveshaft.

"SAFETY FIRST" IN ESSEX.

One of the greatest factors of safety in a car is its balance—that is, the distribution of weight on the wheels. If the weight is unequally distributed there is a dangerous tendency to "skid" on wet pavements or curves. In the Essex the weight has been so perfectly distributed that if you put each of the wheels on a scale one at a time it would be found that the weight on each was almost exactly the same. The result is a car which clings to the turn, handles with the utmost ease and has the least tendency to "skid."

NEW NASH FOUR MAKES ITS DEBUT

Model Attracts Wide Attention at Its First Showing.

With the introduction of the new Nash Four, supplemented by a display of six cylinder cars in open and closed models and a six cylinder show chassis in which the working parts of the motor are exposed to view, the exhibit of the Nash Motors Company at the automobile show attracted unusual attention. That the crowds who would wish to see the Nash would be exceptionally large had been anticipated by officials of the company and preparations were made to have in the Nash booth men particularly qualified to give visitors any information regarding the Nash line that may be sought.

Probably no car at the show this year will create more interest than is being shown in the new Nash Four. This is plainly indicated by the country-wide interest that has been manifested since the announcement by the Nash Motors Company several months ago of the forthcoming four cylinder model. With the raising of the curtain on the new member of the Nash Motors family the public viewed a car of striking body design, and closer examination disclosed in the perfected valve in head motor and other mechanical units that high degree of mechanical excellence that established for the Nash Six a record in the hands of owners throughout the world.

The body design of the new Nash Four is of streamline type and its proportions are in conformity with that good taste which marks a high degree in the coach builder's art. The upholstery is of genuine French plaid leather and the car affords comfortable

seating for five passengers with plenty of room in the tonneau as well as in front for freedom of movement. The dash is equipped with ignition switch, oil gauge, bulbless speedometer and clock; the top is the one man type with curtains adjustable from the inside and opening with the doors.

The comfortable riding qualities of the new Nash Four are assured by unusually long, semi-elliptic springs in both front and rear.

The motor, as in the Nash Six, is clean cut in appearance; it is a high speed perfect valve in head power plant; its principal feature being noticeable, absence of vibration. This is due to the scientific design and to the fact that the motor is equipped with a counterbalanced crankshaft of unusual size. The motor is extremely quiet and its flexibility compares favorably with that of a "Six." Ample power and quick pickup are qualities that are predominant in the Nash Four motor.

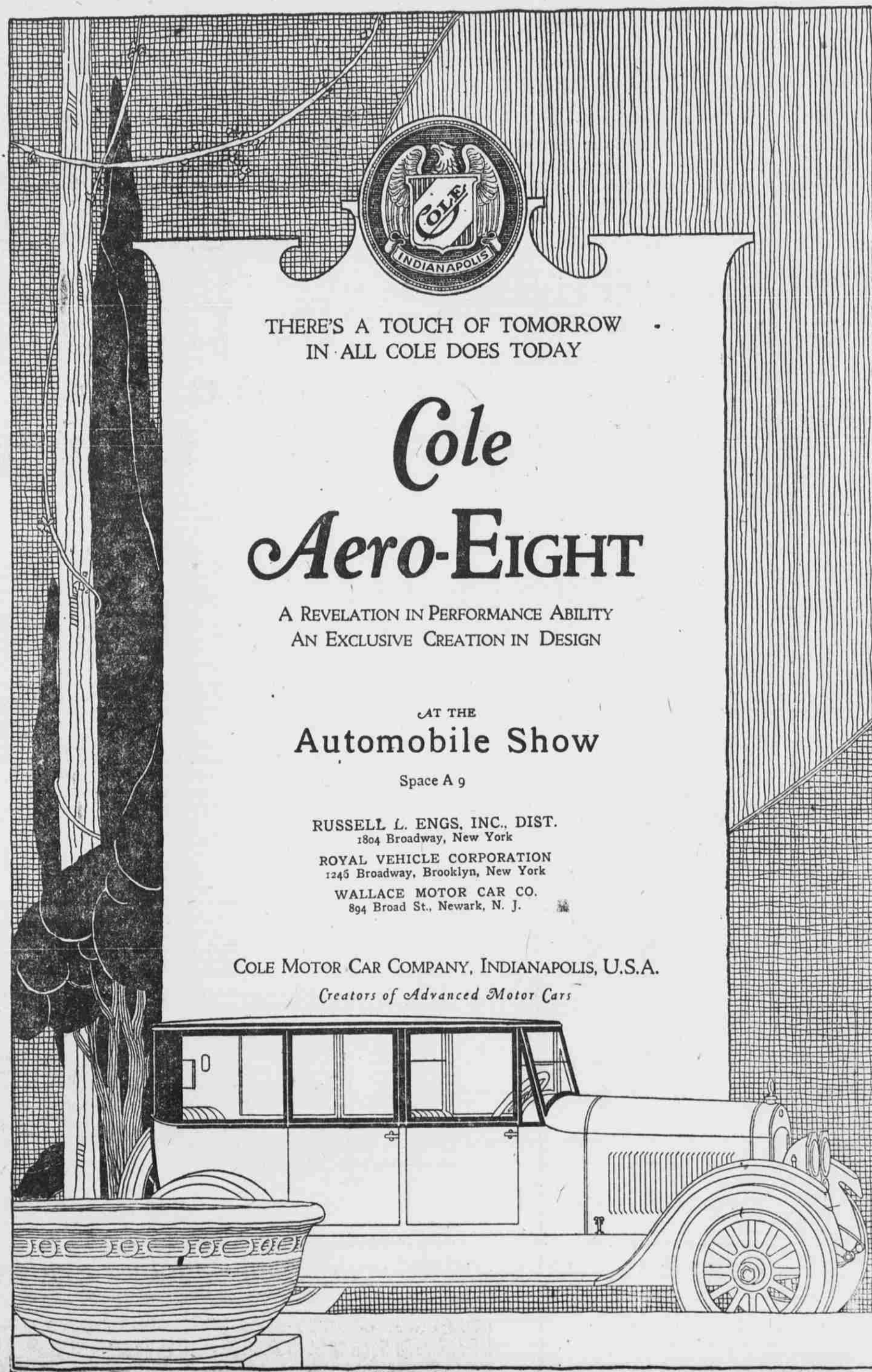
The Nash show chassis with working parts enclosed in glass and exposed to view, and its trim, clean cut motor, presenting the appearance of a smooth block of steel, will divide honors with the new four cylinder car for the attention of visitors. The Nash six cylinder cars on exhibition, including open and closed cars, are expected to make a decided impression upon those who admire graceful lines and perfect balance in a motor car.

ESSEX DEFIES WINTER STORMS

"With the old superstition that the automobile is a summer toy still lingering in many minds," says Harry S. Hought, "the Essex has done much to prove to the public that the automobile is even a greater necessity in winter than it is in summer."

"The snugly fitting curtains which open with the doors give to the touring car the comfort of the enclosed automobile. When not in use they are most conveniently stowed away overhead in hangers that form part of the top."

"When the curtains are lowered they give perfect protection to the passengers. Every set of curtains is hand fitted to each Essex in the special body-trimming department at the Hudson factory. This assures a perfect fit and also ease in handling."



THERE'S A TOUCH OF TOMORROW
IN ALL COLE DOES TODAY

Cole Aero-Eight

A REVELATION IN PERFORMANCE ABILITY
AN EXCLUSIVE CREATION IN DESIGN

AT THE
Automobile Show
Space A 9

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"Built of the Best"



SEDAN—Model 54,
five-pass., 6-cylinders,
120-inch wheelbase.

PERFORMANCE

THAT FEW CARS CAN BOAST

UNUSUAL performance is as much a characteristic of the 1920 DAVIS as distinctive beauty and luxurious riding comfort—for beneath the hood is the new 7R Continental "Red Seal" six-cylinder motor.

Ⓢ This surplus-powered engine is fleet, flexible and silent-running—vibration is absent even at 60 miles an hour. Other high quality units, such as Delco starting-lighting-ignition equipment, Rockwell-Mayo airplane type radiator, Timken bearings, 56-inch rear springs, and stanch 6-inch frame give full substance to the Davis slogan, "Built of the Best." Let us demonstrate to you.

MODELS

OPEN CARS—
Mod. 51, five-pass. touring
Mod. 52, four-pass. sport
Mod. 53, four-pass. special sport

ENCLOSED CARS—
Mod. 54, five-pass. sedan
Mod. 55, five-pass. coupe

See The 1920 Davis at The Show

DAVIS MOTOR CORPORATION

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DAVIS MOTOR SALES CO.

1392 Bedford Ave., Brooklyn

Geo. W. Davis Motor Car Co., — Richmond, Ind.